UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,771	04/02/2004	John J. Koleng	BPH-1	2784

24039 7590 08/07/2007

INNOVAR, LLC
P O BOX 250647
PLANO, TX 75025

EXAMINER	
SASAN, ARADHANA	
ART UNIT	PAPER NUMBER
1615	

MAIL DATE	DELIVERY MODE
08/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/816,771	KOLENG ET AL.	
	Examiner	Art Unit	
	Aradhana Sasan	1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/20/05, 1/31/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Application

1. Claims 1-58 are being presented for examination.

Information Disclosure Statement

2. The information disclosure statements (IDS) submitted on 1/20/05 and 1/31/05 were filed. The submissions are in compliance with the provisions of 37 CFR 1.97 and 1.98. Accordingly, the examiner is considering the information disclosure statements. See attached copy of PTO-1449.

Claim Objections

3. Claims 17 and 42 are objected to because of the following informalities: typo on Page 43, line 21, claim 17, and Page 46, line 13, claim 42, "tamper evident liner" is misspelled "taper evident liner". Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami et al. (US 6,287,596) in view of Luber et al. (US 2003/0068373).

The claimed invention is a rapidly dissolving solid oral compressed composition comprising magnesium salt(s) and having a substantially stable dissolution profile after

storage for at least two months at 40°C and 75% relative humidity. The composition is prepared by dry granulation or direct compression.

Murakami teaches quickly disintegratable compression-molded materials with sufficient strength in handling and which disintegrates and dissolves quickly in the oral cavity or in water (Col. 1, lines 9-13). The strength of the quickly disintegratable material does not permit collapse through the processes of manufacture and distribution (Col. 3, lines 58-63). Excipients such as starches and celluloses are disclosed (Col. 4, lines 29-31). Low substituted hydroxypropyl cellulose and croscarmellose Na are disclosed as examples of celluloses (Col. 4, lines 44-49). It is taught that the excipients "may be used singly or in combination" (Col. 5, line 9). "No particular limitation is imposed on the pharmaceutically active ingredients, ... and instead of the active ingredients, other optional ingredients may be added" (Col. 5, lines 54-55). Examples of optional ingredients such as antacids, including magnesium oxide and magnesium carbonate, are disclosed (Col. 6, lines 15-20). Additives that may be included in the composition such as lubricants, disintegrants (crospovidone), diluents, binding agents, and surfactants are disclosed (Col. 7, lines 10-49). Compression molding of a substantially dry composition which contains an excipient (a) and erythritol (b) is disclosed (Col. 7, lines 60-61). Method 1 teaches the direct compression of an excipient, erythritol, and an active ingredient (Col. 8, lines 1-5). Method 2 teaches dry granulation tableting (Col. 8, lines 6-14). The hardness of the resultant tablets "is regulated to 2-15 kg (Col. 8, lines 63-67). The disintegration time of the tablets is "generally 5-120 seconds, preferably 5-60 seconds, more preferably 5-30 seconds ..." (Col. 9, lines 34-36). "When placed in

the oral cavity, the rapidly disintegratable compression-molded material ... disintegrates or dissolves in the presence of saliva. ... Alternatively, the tablet ... may be taken exactly in the same manner together with water, as in the case of conventional tablets" (Col. 9, lines 44-56). The tablet "exhibits enhanced hardness that does not permit breakage of the process of manufacture and distribution. ...The tablet satisfactorily endures through the operation of removal thereof from a PTP (press through package) package. Moreover, the tablet has a hardness that allows packaging in bottles (i.e., packaging using a container made of, for example, glass or plastics)" (Col. 10, lines 6-13). The long term storageability and stability of the tablet is also disclosed (Col. 10, lines 39-40). Furthermore, the "tablets may be coated by a coating method which is customarily employed for the manufacture of coated formulations" (Col. 10, lines 47-49). Examples 1, 3, 5, and 7 exclude microcrystalline cellulose, have disintegration times of 15-63 seconds, and have hardness of 1.9 - 4 kg (Col. 12, line 61 - Col. 16, line 15).

Murakami does not expressly teach the evaluation of the tablet according to USP after storage.

Luber teaches an immediate release tablet comprising an active ingredient and a powdered wax that meets the USP dissolution specification for immediate release tablets containing the active ingredient (Page 1, [0010]). "Most preferably, the active ingredient is selected from the group consisting of ... magnesium hydroxide, magnesium carbonate, magnesium oxide ..." (Page 1, [0011]). It is taught that the "tablet may be designed for swallowing, chewing, or dissolving in the mouth" (Page 2, [0014]). Also disclosed are "conventional dry binders including cellulose, cellulosic

derivatives, polyvinyl pyrrolidone, starch, modified starch, ... disintegrants such as ... starch, sodium starch glycolate, crosslinked polyvinylpyrrolidone, ... lubricants, ... glidants, surfactants, ..." (Page 2, [0018]). Direct compression, "dry blending", dry granulation followed by compression are disclosed as tableting means (Page 2, [0019]). The "degree of particle compaction is controlled so that the resulting tablets have a hardness of about 1 to 30 kiloponds per square centimeter (kp/cm^2)" (Page 2, [0022]). "Optionally, one or more outer coatings may be applied over the tablet to provide protection during packaging and handling" (Page 3, [0025]). Polyethylene glycol is disclosed as a water-soluble polymer (Page 3, [0030]). Examples 1-4 disclose compositions with hardness from 2 - 3.9 kp, and acetaminophen dissolution profiles after storage at 40°C and 75% relative humidity from 1-12 weeks.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the quickly disintegratable tablets containing antacids such as magnesium oxide and magnesium carbonate, as suggested by Murakami, and combine it with the immediate release tablet containing actives such as magnesium hydroxide, magnesium carbonate, magnesium oxide that meets the USP dissolution specifications, as taught by Luber, and produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because of the excellent industrial productivity for manufacturing the quickly disintegratable tablet by using a dry method as taught by Murakami (Col. 3, lines 64-67 to Col. 4, lines 1-3). The quickly disintegratable tablet can be "easily taken by the aged or infants ... also, the material exhibits excellent long-term storageability and stability" (Col. 10, lines 34-40).

Regarding instant claims 1, 23, 36, 44, and 52, the limitation of the substantially stable dissolution profile according to USP after storage for at least two months at 40°C and 75% relative humidity would have been obvious to one skilled in the art over the teachings of Murakami in view of Luber. Murakami and Luber teach rapidly disintegrating compositions with magnesium salts, hydrophilic polymers and disintegrants. Luber specifically teaches the dissolution profile of actives after 12 weeks at 40°C and 75% relative humidity. One of ordinary skill in the art would find it obvious to make a stable, quickly disintegrating tablet with magnesium salts, store it for 12 weeks at 40°C and 75% relative humidity, and achieve a product with the dissolution profile according to USP for the particular magnesium salt, since both Murakami and Luber disclose stable compositions.

Regarding instant claims 2, 26, 38, and 45, the limitation of the magnesium salts would have been obvious to one skilled in the art over the magnesium antacids taught by Murakami and Luber.

Regarding instant claims 3, 27, 28, 48, and 55, the limitation of the combination of hydrophilic polymers would have been obvious to one skilled in the art over the Murakami teaching that excipients "may be used singly or in combination" (Col. 5, line 9).

Regarding instant claims 4, 50, and 56, the limitation of the hydrophilic polymers would have been obvious to one skilled in the art over the Luber disclosure of polyethylene glycol as a water-soluble polymer. Polyvinyl pyrrolidone is disclosed by Murakami and Luber (please see above).

Regarding instant claims 5, 51, and 57, the limitation of the disintegrant would have been obvious to one skilled in the art over the low substituted hydroxypropyl cellulose and croscarmellose Na teaching by Murakami and the sodium starch glycolate, and cross linked polyvinyl pyrrolidone teaching of Luber.

Regarding instant claims 6 and 34, the limitation of the coating surrounding the compressed composition would have been obvious to one skilled in the art over the coating of the quickly disintegratable tablets of Murakami and the coating of the immediate release tablets of Luber.

Regarding instant claims 7 and 13, the limitation of the tablet or capsule would have been obvious to one skilled in the art over the compressed tablets taught by Murakami and Luber.

Regarding instant claims 8-9, 19, 29-30, 32-33, 39, 40, 46, and 53, the limitations of dry granulation and direct compression would have been obvious to one skilled in the art over the dry granulation and direct compression taught by Murakami and Luber.

Regarding instant claims 10, 25, and 37, the limitation of the magnesium salt ranging from being sparingly soluble to being practically insoluble, would have been obvious to one skilled in the art over the magnesium salts taught by Murakami and Luber which range from being very slightly soluble (magnesium oxide) to being practically insoluble in water (magnesium hydroxide).

Regarding instant claims 11, 24, and 49, the limitation of the magnesium salt present in a therapeutically effective amount would have been obvious to one skilled in the art over the teaching of Murakami that the antacids can be actives in the

composition, and the teaching of Luber that magnesium hydroxide, magnesium carbonate, and magnesium oxide can be actives in the tablet.

Regarding instant claims 12 and 35, the limitation of a capsule shell within which the compressed composition is enclosed would have been obvious to one skilled in the art over the coating of the quickly disintegratable tablets of Murakami and the coating of the immediate release tablets of Luber. One skilled in the art would know that a capsule shell is a form of coating.

Regarding instant claim 14, the limitation of tablet hardness would have been obvious to one skilled in the art over the tablet hardness taught by Luber. Luber teaches tablet hardness of 1 to 30 kiloponds per square centimeter (kp/cm^2)" (Page 2, [0022]). Although this range does not exactly match the range of instant claim 14, one skilled in the art would modify the process parameters in order to obtain the desired tablet hardness during the process of routine optimization.

Regarding instant claim 15, the limitation of dissolution medium as dilute hydrochloric acid would have been obvious to one skilled in the art over the dissolution profile at pH 5.8 taught by Luber (Examples 1-4). One skilled in the art would use the USP method of determining the dissolution profile and use the pH buffer specified.

Regarding instant claim 16, the limitation of a sealed container-enclosure system would have been obvious to one skilled in the art because during storage of tablets containing antacids, exposure to moisture would be minimized to prevent degradation of the active antacid material.

Regarding instant claims 17-18, and 42, the limitation of the container-enclosure and sealing system would have been obvious to one skilled in the art over the Murakami teaching of storing the tablets in bottles (glass or plastic). One skilled in the art would minimize the exposure of the tablets to moisture and choose packaging material in order to do so. The high density polyethylene container, child resistant closures, and tamper evident liners would have been obvious to one skilled in the art as standard packaging devices used for tablets and solid dosage forms.

Regarding instant claims 20-22, 31, 47 and 54 the limitation of water content ranging from less than 7.5% to less than 4% would have been obvious to one skilled in the art over the dry granulation and direct compression taught by Murakami and Luber. One skilled in the art would modify the process parameters and levels of components during the process of routine experimentation in order to achieve the desired moisture content in the finished product.

Regarding instant claim 41, the limitation of the process not including the addition of water would have been obvious to one skilled in the art over the dry granulation and direct compression taught by Murakami and Luber.

Regarding instant claims 43 and 58, the limitation of the composition excluding microcrystalline cellulose would have been obvious to one skilled in the art over the Murakami teaching of examples 1, 3, 5, and 7, which exclude microcrystalline cellulose.

Conclusion

6. No claims are allowed.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aradhana Sasan whose telephone number is (571) 272-9022. The examiner can normally be reached Monday to Thursday from 6:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, can be reached at 571-272-8373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MPW

MICHAEL P. WOODWARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600